

Electronic Computer Programming Institute
of Albany Inc.
35 Fuller Road — Albany, N. Y. 12205

FIRST - CLASS

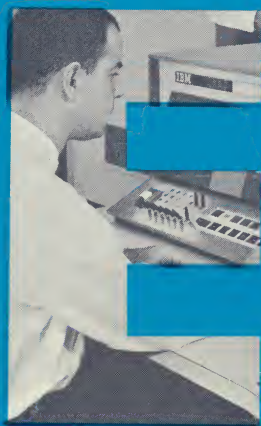
TO

Mr. J. Nelson

Box 1546

Poughkeepsie N.Y. 12603





for men and women who want to GET AHEAD



ELECTRONIC COMPUTER PROGRAMMING INSTITUTE



thousands of
high paying
career jobs —
working with
computers
are waiting for
TRAINED
men and women

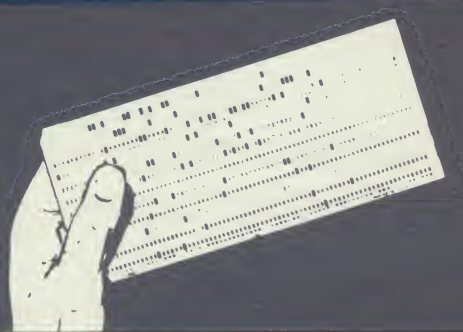


TRAINS YOU
in Data Processing
and Computer
Programming for
IBM equipment

Automation has created a whole new group of jobs throughout the nation and the whole world. The field has developed so rapidly that there is a critical shortage of trained personnel. Electronic computers perform wonderful feats . . . but they can't *think*. Like any machine, they must be operated or controlled by PEOPLE who start them, feed work into them, keep them working properly, remove completed work. These jobs include: Systems and Procedures, Tabulating and Accounting machines, Computer Programming and Console operation.

**NO RIGID EDUCATIONAL REQUIREMENTS
OR MATH BACKGROUND NECESSARY**

AUTOMATION IS USED IN EVERY MAJOR FIELD



- Insurance Companies
- Railroads
- Airlines
- Trunk Lines
- Textile Industries
- Research
- Government
- Publications
- Advertising
- Utilities
- Institutions
- Manufacturing
- Hospitals
- Banks
- Brokerage Houses
- Clothing Manufacturers
- Agriculture
- Radio & Television
- Department Stores
- Mail Order Firms

Only a few years back, this field of occupations was non-existent. Today it is one of the most important in the business world. The computer field is part of "automation" that you've heard so much about in connection with loss of jobs in many fields — but it has created a whole new group of jobs for others

Some of the jobs being done on computers...

Courtesy International Business Machines Corp.



- Preparation of payrolls
- Inventory control
- Billing
- Accounts payable
- Sales analysis
- Mass Statistical information
- Cataloging library books
- Scientific and engineering calculations
- Marketing problems
- Predicting outcome of elections, etc.

the programmer

The PROGRAMMER is the key man or woman in an installation of electronic data processing equipment. He prepares the "programs" for the computers, specifying exactly what steps these machines should take to get the desired results.

There are four main steps

1. Analyzing the problem.
2. Preparing the "flow chart" or "block diagram."
3. Writing detailed instructions for the computer.
4. Making sure that the program works on the computer (debugging).



a distinguished staff and faculty assures your **SUCCESS**



SIDNEY DAVIS,
President

Space does not permit listing the entire staffs of all our schools. Below are a few examples, illustrating the high caliber of instruction offered by ECPI.

SIDNEY DAVIS, President-Director: B.S., L.L.B., Management Consultant, Data Processing Systems and Procedures. Designed and executed the first Computer Programming Training course to be publicly offered in the United States.

LEONARD NOWAK, San Francisco — Service Bureau Corporation

BARRY WITTMAN, New Brunswick — Systems Analyst, Bell Tel. Lab.

DONALD ROBERTS, Chicago — Honeywell, Inc. Manufacturers

GARY HANEY, Pittsburgh — Systems Analyst, Alcoa Corp.

JAMES CHAPIN, Cleveland — Data Processing Sup., Ford Motor Co.

BRENDA SCHENDEL, Milwaukee — Formerly Systems Engr., IBM Corp.

ROBERT WOJTUSIK, Hartford — Data Processing Mgr., General Elec.

ERNEST DAVIS, Providence — Programming Supervisor, Foxboro Co.

E.C.P.I. enrollment gives you...

COMPREHENSIVE TRAINING

The most complete and thorough training course in computer programming available in any business school.

EXPERT INSTRUCTION

Our instructors are highly qualified data processing experts. They possess years of practical experience installing and operating data processing systems and supervising staffs in leading companies.

TRAINING ON ACTUAL EQUIPMENT

Classroom training is augmented by "hands-on" training. Students participate in console exercises and de-bugging techniques with the latest equipment.

LATEST TEXTS — YOURS TO KEEP

ECPI textbooks, prepared and developed by us for our own use, are considered to be among the finest in the country.

ACCEPTANCE BY INDUSTRY

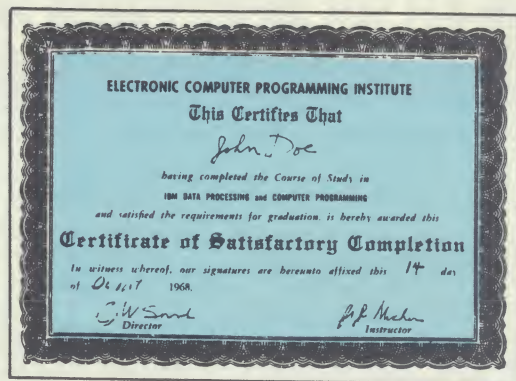
Because ECPI's courses are designed on a practical basis to meet the requirements of industry, we enjoy a high reputation for professionalism. In fact, many firms send their personnel to our schools for training under company-sponsored tuition refund plans.

FREE PLACEMENT ASSISTANCE

Qualifications of graduates are made known to personnel directors. ECPI receives many calls from firms, asking for graduates. This service is available even to graduates who have been out in the field, and are looking for new jobs.

your
E.C.P.I.
CERTIFICATE

awarded upon
satisfactory completion
of the course
certifies
your
proficiency



Our reputation for professionalism becomes your reputation and precedes you when you look for a job. Our *Certificate of Completion* has opened doors in major companies for thousands of graduates.



JULIETTE TENG
Placed with
First Boston Corp.



ALTHEA MOORE
Placed with
The Methods Co.



HERBERT SUNSHINE
Placed with
Grand Union

FIRMS LIKE THESE seek E.C.P.I. graduates...

A partial list of companies where our graduates work in responsible positions

Aetna Casualty & Surety Co.
Allied Chemical Co.
Alexander's Dept. Store
American Airlines
American Bible Society
American Broadcasting Co.
American Cyanamid Co.
American Express Co.
Army & Air Force Exchange Service
Arnold Bakers, Inc.
Associated Food Stores
American Telephone & Telegraph Co.

Bank for Savings
Bankers Trust Company
Baumritter Corp.
Bell Telephone Laboratories
Book of the Month Club Inc.
Brooklyn Union Gas Co.
B.V.D. Co., Inc.

Catholic Book Publishing Co.
Chase Manhattan Bank
Chemical Bank N.Y. Trust Co.
Chesebrough — Pond's Inc.
City College of New York
Columbia Records Div. C.B.S.
Commercial Union Life Ins. Co.
Consolidated Mutual Insurance Co.

Dell Publishing Co.
Diners Club Inc.
Dodge, The F.W. Corp.
Donnelly, Reuben H. Corp.
duPont, Francis I. & Co.

Empire Mutual Life Ins. Co.
Equitable Life Assurance Soc.
Esso Export Corp.
Esso International Inc.

Federal Home Loan Banks
First National City Bank
Franklin Savings Bank

Garcia & Vega Inc.
General Electric Co.
Gibbs & Cox Inc.
Girl Scouts of America
Goodbody & Co.
Grant, W.T. Company

Horn & Hardart

Ingersoll-Rand Co.
International Business Machines (IBM)

Jonas Aircraft & Arms Co., Inc.

McGraw-Hill Publishing Company
Manufacturers Hanover Bank
Mangel Stores Corp.
Metro-Goldwyn-Mayer Inc.
Metropolitan Life Insurance Co.
Miles Shoes
Military Defense Agency
Mitsubishi International Corp.
Montefiore Hospital
Montgomery Ward & Co.
Moore-McCormack Lines Inc.
Mutual Insurance Rating Bureau

New Jersey Telephone Company
New York Central R.R.
New York Hospital
New York Savings Bank
New York State Department of Education
New York Telephone Co.

Otis Elevator Co.
Olin Mathieson Chemical Corp.

Pan American World Airways
Parents Institute
Phoenix of London — Insurance
Polytech Institute of Brooklyn
Prudential Life Insurance Co.

Republic Aviation Corp.
Robert Hall Clothes
Rogers-Peet Co.
Roosevelt Hospital

Savings Banks Trust Co.
Scandinavian Airlines
Schenley Industries Inc.
Schwarz, F.A.O., Toys
Seafarer Welfare & Pension Fund
Sonnenborn Chemical & Refining Corp.
State Farm Insurance Co.
Swift & Co., Inc.

Tetley Tea Co., Inc.
Texaco Inc.
Topps Chewing Gum Inc.

Underwood Corp. Typewriters
United Fruit Co.
United Merchants & Mfrs. Inc.
United States Steel Corp.
United States Tobacco Co.
United States Plywood Corp.





OUTLINE of COURSE

1. Introduction to punched card data processing
2. Creating the punched card
3. Reading and Interpreting punched cards
4. Functional control panel wiring principles
5. Sorting and collating
6. Automatic punching and reproducing
7. Basic accounting (tabulating) machine functions
8. Advanced accounting (tabulating) machine functions
9. Introduction to Electronic Data Processing
10. Stored program concepts and block diagramming
11. Data Processing system principles
12. Data Processing system components
13. Instruction format and addressing
14. Input/Output codes; data transmission methods
15. Arithmetic codes
16. Elements of symbolic programming
17. Comparison, decisions and logic operations
18. The editing instruction
19. Multiplication & division
20. Miscellaneous operations
21. Magnetic tape concepts; Assembly languages
22. Programming using Autocoder
23. Data Processing system console
24. Program assembly and de-bugging
25. "Hands-on" training; job controls

What Students Say

Random excerpts
from
actual letters
in our
New York office
files.

A PROMISING FUTURE

I would like to express my appreciation to E.C.P.I. for its help and encouragement in placement and for the opportunity I would otherwise never have realized without the school. At the age of eighteen, with no practical work experience, I was able to apply and be accepted by a large organization in a responsible position with a promising future.

J.C. — Reseda, Calif.

CAN'T THANK YOU ENOUGH

I can't thank you enough for helping me get my new job in Data Processing. While attending E.C.P.I., I gained a wide variety of knowledge in the field of I.B.M. I would recommend E.C.P.I. to anyone. As a former messenger, I was going no place fast until I took your course.

A.P. — New York, N. Y.

OFFERED A GREAT OPPORTUNITY

Frankly, I never enjoyed the routine office job I had, but as secretary, I never thought I could aspire to much more. I feel as if I have been offered a great opportunity, which would not have been possible without the excellent schooling I received from E.C.P.I. I love the job I now have.

S.O. — Chicago, Ill.

LUCRATIVE AND FASCINATING NEW CAREER

I was formerly a machine operator with a furrier company. Due to my training at E.C.P.I., I have embarked upon the threshold of a lucrative and fascinating new career. I don't have to worry about automation anymore. I'm part of it now.

T.K. — Paterson, N. J.

WHOLE OUTLOOK ON LIFE CHANGED

When my husband passed away after 25 years of marriage, the future looked very bleak for me. Then I heard of E.C.P.I. and almost immediately after I started class, it seemed to me that my whole outlook on life changed. Now I have graduated and have a job. I started one week after I got out of school.

M.H. — Detroit, Mich.

MOST OUTSTANDING SCHOOL

It is my firm belief that E.C.P.I. is the most outstanding school, with excellent, modern facilities. The quality of instructors and text material cannot be equalled. Permit me to congratulate you for the professional manner in which the school is run, where the emphasis is on educational achievement and where petty regimentation is non-existent. I cannot find words to express my esteem for your placement assistance program. Perhaps the position you obtained for me speaks for itself.

D.A. — Atlanta, Ga.



TO SUM IT ALL UP ...

- ELECTRONIC COMPUTER PROGRAMMING INSTITUTE trains you step-by-step for a new high-pay career in Data Processing and Computer Programming for IBM equipment.
- We are one of the pioneer education organizations in this field — one of the best equipped and most respected.
- We have over 65 resident schools, coast-to-coast.
- The highest industry and ethical standards are maintained.
- No rigid educational pre-requisites.
No special math background necessary.
- Keep your present job while learning —
Day, Evening, Saturday classes.
- Special textbooks, yours to keep.
- Diploma awarded on satisfactory completion.
- Free placement assistance to graduates.



W.E. GLEN
Placed with
First Natl.
City Bank



**EILEEN
WHITE**
Placed with
Pittsburgh
Natl. Bank



**ASTLEY
JOHNSON**
Placed with
Ace
Assembly Co.



**EDWARD
MAGUIRE**
Placed with
Industrial
Natl. Bank



**RAY
BLOCK**
Placed with
Yale
Transportation

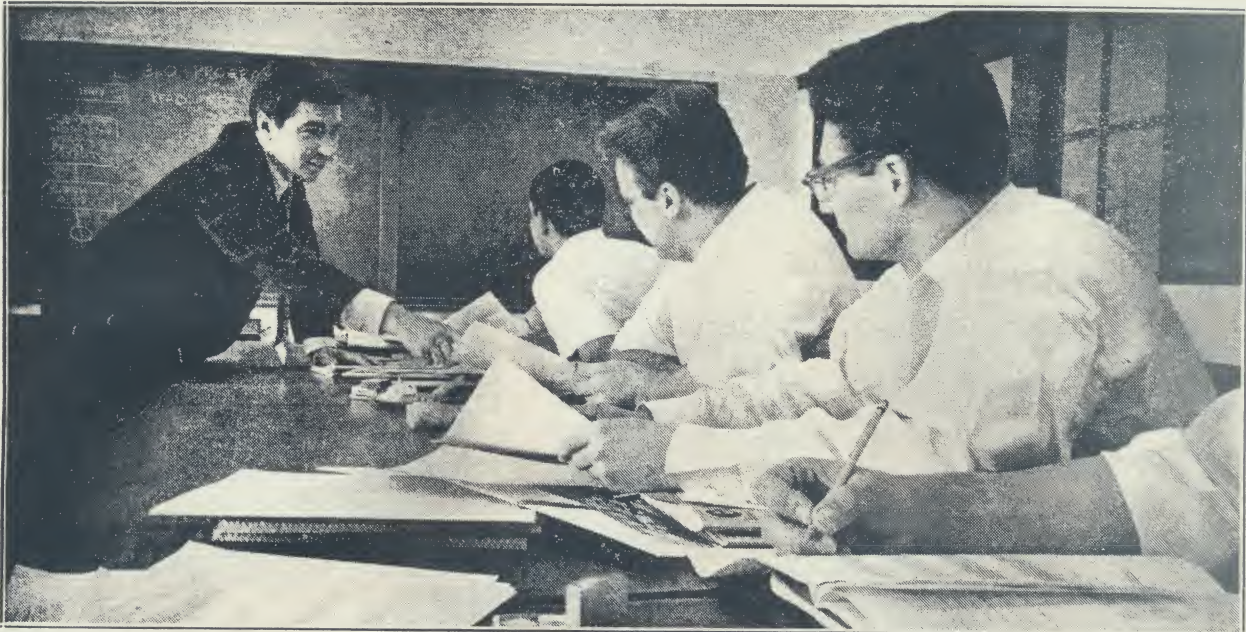
ELECTRONIC COMPUTER PROGRAMMING INSTITUTE



**RAYMOND
BERNARD, JR.**
Placed with
American
Express



**OLGA
TARR**
Placed with
Commercial
Solvents Corp.



Computer programming instructor Mike Cappi goes over programming problem with his convict students during weekly session at Sing Sing.

New Look at the Sun From Inside Sing Sing

By WILLIAM ROLLINS

THE MAN who is talking now is not a real human being but a composite of 14 convicts in Sing Sing Prison:

"This is my real shot at the outside. I mean I know, I really know, this can get me turned around. I've got to make it . . .

"Maybe you can't understand what this thing means when you're in here. . . . This thing means a job out there. A job with money on it. A job inside. A job that's, well, real.

DAILY NEWS SPECIAL FEATURE

"These people are teaching me something and, man, I'm learning it."

The 14 men were seated around a large U-shaped table in a classroom in Sing Sing's school building, completely absorbed in the complex work in front of them except for those moments when a visiting reporter asked one of them aside for a talk.

To the visitor, their work was utterly incomprehensible.

Prisoners Took Toughest Test

It consisted of strange designs and codes and lettering and little arrows pointing at things in odd-looking charts.

The prisoners are, in fact, learning computer programming. And learning it with a singular passion.

The complicated, advanced training behind bars is a joint project of the State Department of Correction and the Electronic Computer Programming Institute.

State prison officials are attempting to expand their rehabilitation training programs and the company came along with the suggestion for the almost certainly unique state prison training program. The prison system provides the materials used and the company provides the instructor.

The prisoners provide themselves.

Officials stipulated at the outset that volunteers had to have 18 months or less to serve in prison and that their crimes had to have been non-violent and non-sexual.

Twenty-three prisoners took an aptitude test—one tougher than ordinarily given by the company in its commercial training screening on the outside—and

the 14 men were selected for the pioneer project.

They went to work at it on Nov. 11, which, as it happened, was Armistice Day.

Since then, every Saturday morning at exactly 8 o'clock, the 14 convicts have gone to work in their classroom adjoining the prison library. They work until noon, take a half-hour for lunch, then go back at it until 2:30 in the afternoon. (In the process, the men miss their regular visitors' hours and the weekly prison movies.) The weekly sessions in this pilot training cycle will continue until mid-April.

Program Depends on Men

A very great deal depends on what happens to the program and the men in it—and the 14 convicts know it.

State prison officials are closely following the progress of the course and will keep close tabs on how the 14 men perform on the outside.

If they perform well, and so does an anticipated second class, then general expansion of the program to other state prisons is a possibility.

At the same time, the Department of Correction is closely examining the program and the men in it while it considers two other possible elements of the rehabilitation program.

Deputy Commissioner Joseph David cites the possibility of establishing a "half-way house" in New York City for men on their way back to society. The men would be confined at night and on week ends—but work on the outside during week days. Another possibility would be the changing of the "state use system"—which prevents convicts from working in any fields except those serving or servicing the state or local governments.

Both possibilities, if the department decides to go after them, would require changes in the law.

Cons Answer With Feeling

As for the corporate member of the program-sponsoring team, E.C.P.I. president Sidney Davis says simply that "I think the idea is expandable." As for the other rehabilitation ideas being considered: "Our goal is to have the prisoner put to use what he's learning right now. We are sacrificing a little by not having the men come down here (New York, where the computers are). It's a question of excellence or excellence plus."

He and his company got into the prison training idea out of what Davis calls a sense of "corporate responsibility"—and to prove that convicts with an aptitude for the job could do it. "The question of whether the students would be self-motivated was a question that



Redesigning his life, a Sing Sing inmate works on program.

had to be answered." (It has been, with feeling.)

The question of whether an ex-convict can get a job in the computer programming field seems to have been answered. The answer: no problem. The need for programming says Davis, "far outstrips the present supply."

Another company officer, Jack Green, reports that the first approaches to outside companies brought "considerable encouragement."

That, of course, appears to be the key to the matter.

As for encouragement on the scene, possibly the most optimistic man in the entire picture is the instructor of the 14 convicts at Sing Sing.

At 30, Mike Cappi, of Yonkers, has been in the computer programming and

systems analysis field for seven years—and says he has "never come across a finer group of students."

The 14 men will eventually log about 240 classroom hours (for the course that ordinarily costs about \$1,000 on the outside) but also are putting in up to 20 hours a week of homework on their own time.

For that reason, says Cappi, "I find myself boning up every Friday night. . . . My students have so much time between sessions to study and cross examine each other during the week that they have some real probing questions for me at the start of each class."

In any event, a very great deal is at stake—for those 14 men and possibly a great many more in the future.

FACTS ABOUT E.C.P.I.'S PLACEMENT SERVICE

- I. OUR ULTIMATE GOAL IS TO SEE EVERY E.C.P.I. GRADUATE EMPLOYED IN THE FIELD OF DATA PROCESSING. WE DO NOT MAKE ANY FALSE, UNETHICAL GUARANTEES OF PLACEMENT TO ANY PROSPECTIVE STUDENT, HOWEVER, WE WILL ALWAYS MAKE EVERY POSSIBLE EFFORT IN ORDER TO ACHIEVE THIS GOAL. AT E.C.P.I., THE EMPHASIS IS ON THE INDIVIDUAL. HIS SUCCESS, BOTH IN SCHOOL AND ON THE JOB, IS OF VITAL CONCERN TO US ALL.
- II. WE HAVE A PLACEMENT DIRECTOR WHO IS EMPLOYED ON A FULL-TIME BASIS AND HAS AN OFFICE IN THE SCHOOL. THE FUNCTION OF THE PLACEMENT DIRECTOR IS TO ASSIST OUR GRADUATES IN SECURING EMPLOYMENT IN THE FIELD OF DATA PROCESSING. OUR PLACEMENT PROGRAM IS AVAILABLE AS A LIFE-TIME SERVICE AND ANY E.C.P.I. GRADUATE IS WELCOME TO OUR ASSISTANCE THROUGHOUT HIS OR HER CAREER.

HIGHLIGHTS IN ECPI'S PLACEMENT PROGRAM

- I. DURING 1966, THE GENERAL ELECTRIC COMPANY WAS AT E.C.P.I. TO ADMINISTER THEIR PROGRAMMER APTITUDE TEST TO GRADUATES AND STUDENTS FOR OPENINGS AS PROGRAMMER TRAINEES AT THEIR SCHENECTADY PLANT. AS A RESULT, FIVE E.C.P.I. GRADUATES WERE EMPLOYED AS PROGRAMMER TRAINEES, AND TWO MORE GRADUATES WERE SUBSEQUENTLY HIRED FOR THE KNOLLS ATOMIC LABORATORY OPERATION IN SCHENECTADY. NONE OF THESE FORMER E.C.P.I. STUDENTS ARE COLLEGE GRADUATES AND MOST HAVE NO COLLEGE TRAINING.
- II. DURING 1967, INTERNATIONAL BUSINESS MACHINES WAS AT E.C.P.I. TO ADMINISTER THEIR PAT (PROGRAMMERS APTITUDE TEST) TO GRADUATES AND STUDENTS. TWENTY E.C.P.I. STUDENTS WERE SELECTED AND INTERVIEWED BASED ON THE RESULTS OF THIS TEST FOR FURTHER INTERVIEWS AT THE IBM PLANTS IN KINGSTON AND POUGHKEEPSIE, NEW YORK. THE POSITIONS AVAILABLE WERE FOR COMPUTER OPERATORS AND IBM PAID FOR THE TRAVEL EXPENSES TO BOTH PLANTS. THE IBM REPRESENTATIVES EXPRESSED THEIR SATISFACTION WITH THE QUALITY OF OUR GRADUATES IN VIEW OF THE EXTREMELY HIGH STANDARDS REQUIRED BY IBM FOR THESE POSITIONS. FURTHERMORE, THEY EXPRESSED THE DESIRE TO COME TO ALBANY TO TEST FUTURE GRADUATING CLASSES. AS A RESULT OF THE TESTING, FIVE E.C.P.I. GRADUATES WERE HIRED BY IBM.
- III. E.C.P.I. GRADUATES HAVE BEEN RECENTLY EMPLOYED IN DATA PROCESSING POSITIONS WITH FOLLOWING COMPANIES:
ALBANY COUNTY DATA, ALBANY, NEW YORK
CONTROL DATA CORPORATION, WASHINGTON, D.C.

ELECTRONIC COMPUTER PROGRAMMING INSTITUTE

COURSE OUTLINE

1. Introduction to punched card data processing
2. Creating the punched card
3. Reading and Interpreting punched cards
4. Functional control panel wiring principles
5. Sorting and collating
6. Automatic punching and reproducing
7. Examination #1

8. Basic accounting (tabulating) machine functions
9. Advanced accounting (tabulating) machine functions
10. Examination #2

11. Introduction to Electronic Data Processing
12. IBM system 360 principles
13. IBM system 360 components
14. Binary and Hexadecimal numbering systems
15. Stored program concepts and block diagramming
16. Assembly language programming
17. Macro Instructions
18. Fixed-point binary arithmetic Instructions
19. Comparison, decision, and logic operations
20. Program modification
21. Examination #3

22. Decimal Feature Instructions
23. Input/Output control
24. Editing
25. Magnetic Tape Concepts
26. Indexing
27. Table Lookup procedures
28. Function of System Supervisor
29. The 360 Console'
30. Program Assembly and de-bugging
31. "Hands on" training
32. Electronic Data Processing Systems Concepts;
card and form layout; timing; job analysis;
accounting controls; physical planning etc.
33. Examination #4

34. Introduction to Cobol
35. Cobol Program Structure
36. Cobol Character Set and Rules for Punctuation
and Notation
37. Miscellaneous Statements
38. Examination #5

New Industry: Schools for Programmers

THE WALL STREET JOURNAL,

Monday, September 25, 1967

* * *

COMPUTER SPECIALISTS grow scarcer.
Wages and raiding increase.

"If a qualified programmer comes in here, I have at least 100 places to send him immediately," says an official of a Chicago employment agency. Burroughs Corp. is short 100 programmers. McDonnell Douglas' aircraft division in California needs 100 programmers and operators; it starts a special night shift for employees who attend school during the day.

North American Rockwell's division in El Segundo, Calif., offers programmers \$550 to \$750 monthly, up \$50 from last year. Computer Centre, a Chicago employment agency, says some experienced programmers and analysts command \$14,000 to \$18,000 annually compared with \$12,000 a year ago. Scientific Data Systems, a Santa Monica, Calif., computer maker, lures people from other firms with offers 12% above their present salaries.

* * *

'Average' People Can Do Very Well

Gyenes, whose division of the Service Bureau runs a data processing school, added, "There are some very bright people that would never in a million years make programmers, while on the other hand there are people of average intelligence who are doing an excellent job in the field."

"There is a mystique about programming stemming from the early days of the computer that requires every programmer to be a mathematical wizard," Walter M. Johnson, a vice president of Computer Usage Education, Inc., a subsidiary of the Computer Usage Co., commented. He explained: "In the early days, all your computers were used for scientific purposes, so solving problems and writing programs required a high degree of proficiency in mathematics. Now, only a layman's knowledge of arithmetic and algebra is all that is required for the bulk of programming assignments."

N.Y Times News Service

NEW YORK — Len Theberge, an ambitious 22-year-old high school graduate, is presently employed as a glorified office boy by a major manufacturing concern.

In 20 years, if he works hard, he may become assistant office manager or even office manager.

Len wants out. So he buys a newspaper and looks in the classified section for another job, one with opportunity. The paper contains column after column of advertisements of companies looking for something called a computer programmer.

The salaries mentioned in the ads run from \$6,000 to \$20,000. That's big money in Len's book.

In another section of the same paper, he comes across ads for schools that offer to teach people to be programmers. The course takes less than six months, its cost is not exorbitant and the opportunity is open to anyone who can pass an aptitude test. He can even go at night.

Programmer Tells Computer How to Work

Then and there, Len decides to become a computer programmer, who is the person who instructs the computer how to solve problems.

The Len Theberges of the nation are the basic ingredients of a booming new industry — the commercial computer training school. There are now more than 1,000 schools, not counting colleges, across the nation teaching programming skills for profit.

There is a great and growing need for programmers. At this moment there are unfilled jobs for more than 50,000 programmers. By next year, the shortage is expected to grow to about 100,000, and forecasts place the nation's programming needs in the early 1970's at about 500,000.

Programmers command and get good pay, and competent, quick and reasonably priced training in the field is available.

Programming Requires Right Mentality

Nonetheless, there is a good chance that our ambitious friend, Theberge, may never become a programmer.

Although Len is ambitious, he may not have the right mentality to become a competent programmer.

This does not mean that he has to be a genius. Far from it. It only means that in order to be a competent programmer, Len must possess certain mental traits and a fair degree of intelligence.

"Ordinary programming requires no genius, only a trained, logical mind of the type that enjoys solving puzzles," according to Ed Eberle, director of the ADR Programming Institute.

Andrew Gyenes, area manager of scientific services for the Computing Sciences Division of the Service Bureau Corp., a subsidiary of the International Business Machines Corp., describes programming as a "relatively narrow profession something like language translation. Once someone gives a programmer a plan for solution of a problem, the only other requirement is to translate the solution into machine-understandable form."

WALL STREET JOURNAL

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TUESDAY, SEPTEMBER 21, 1965

Lack of Programers Hits Computer Users; Training Is Stepped Up

* * *

Shortage, Estimated at 25,000,
Prompts Makers and Schools
To Increase Their Courses

By BURT ALIMANSKY

Staff Reporter of THE WALL STREET JOURNAL

WANTED: Computer programers. Male or female. Will train. No experience necessary. College education not required.

An easy job to fill? It would seem so, but it isn't. In fact, the shortage of computer programers is becoming so acute in this era of mounting computer sales that it is preventing many users from employing their computers to maximum advantage, according to Carl H. Reynolds, director of programing systems development for International Business Machines Corp.

To meet the rising demand for programers, industry is broadening its training efforts and an increasing number of high schools and colleges are adding programing courses to the curricula. Even so, the supply is lagging far behind the demand. "Companies want programers so badly," says one educator, "they'll take anyone with a little bit of knowledge." The current corps of 100,000 programers is about 25,000 fewer than needed to efficiently handle the nation's 23,000 computers, companies say.

Programing is vital to the use of a computer. A programer first analyzes what the user wants the computer to do, determines what steps the computer must take to achieve these goals and then translates these into a language—the "program"—that is understood by the computer and that is used to perform the chores.

A 400 Man-Year Project

It is no quick and easy job. Indeed, it sometimes takes longer to program a computer than to build one. One of the largest commercial computer systems, for example, a reservations-processing unit built by IBM for American Airlines, took 400 man-years to program.

The shortage of programers could be a threat to future sales of computers, which currently are growing 15% to 20% yearly. To ease this threat, many of the computer-makers are setting up programer-training techniques for themselves and their customers.

Cause of Drop-Outs?

Control Data Corp. is opening a computer training school in Minneapolis that will teach programing and computer technology. The school, which has tuition of \$1,600 a year, is open to high-school graduates.

Many academic institutions also are developing courses for programing. Miami-Dade Junior College in Florida says it is doubling its programer-training plans because it has been unable to fill the standing requests from companies for programers.

In Brooklyn, 12 students at George Westinghouse Vocational and Technical High School studied computer programing earlier this year but all "were snatched away by industry before we could give them certificates," says principal Nathan Clark.

What's in it for a youth if he decides to become a programer? For one thing, a salary that generally starts at \$5,500 a year or so and could eventually top \$20,000 if the person rises to a top position with managerial duties.

When you interview programmers, give our graduates a hard time. We did.

To begin with, we give them a hard time before they ever see the inside of our classrooms.

We make them take an hour-long written test. The test separates the people who have the aptitude from those who don't. Next, an interview separates the ones who can pass our course from those who can just pass our aptitude test.

And then the hard time really begins.

Our students have to grind their way through 210 hours of computer programming classes, sweat out hundreds of hours of homework, and pay close to a thousand of their own hard-earned dollars for the privilege.

With that kind of investment at stake, it's a safe bet that ECPI students spend their time looking at the blackboard, not out the window. But we give them a stiff three hour final exam anyhow, to make sure.

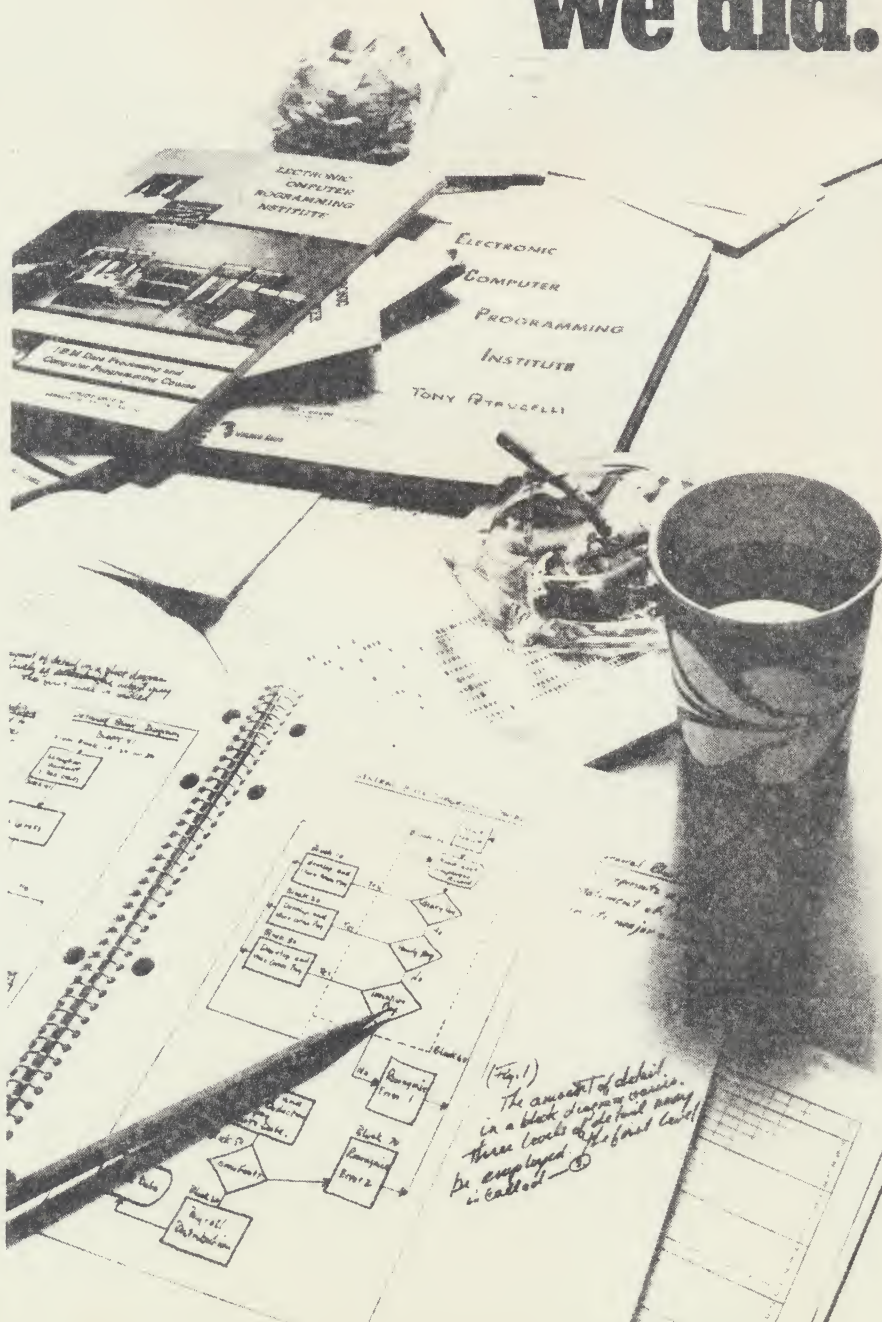
If you write us, we'll be glad to have a nearby ECPI training center send you a copy of that final exam.

You might find it interesting to try on some of the people you interview.

You could even try taking it yourself. You'll be surprised how much an ECPI student has to know to pass it and become an ECPI graduate.

But then, the way we look at it, the harder a time we give our graduates before you hire them, the easier a time they'll give you afterwards.

ECPI ELECTRONIC COMPUTER
PROGRAMMING INSTITUTE
Empire State Building, N.Y., N.Y.
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KENNETH KOSLIK, 25, OF SCHENECTADY, WENT TO CONTROL DATA CORP. IN WASHINGTON, D.C.

CHARLES DARROW, 23, OF DOVER PLAINS, NEW YORK, JOINED THE DATA PROCESSING INSTALLATION AT THE WESTON COMPANY IN POUGHKEEPSIE, NEW YORK.

EARL BALLOU, 23, OF SCHENECTADY WENT TO THE DATA PROCESSING INSTALLATION AT ALBANY MEDICAL COLLEGE.

MR. DONALD DONOVAN IS NOW HEAD OF DATA PROCESSING OPERATIONS AT THE BRISTOL LABORATORIES IN SYRACUSE, NEW YORK.

RONALD DUERR WENT TO THE FIRST TRUST AND DEPOSIT COMPANY OF SYRACUSE AS A PROGRAMMER.

THE AUBURN, NEW YORK FIRM OF DUNN AND McCARTHY HIRED JOSEPH SPEACH AS A PROGRAMMER.

COBURN RISING JOINED THE GENERAL ELECTRIC COMPANY IN UTICA, NEW YORK AS A PROGRAMMER.

~~JOHN J. ATINI WAS HIRED BY THE DATA PROCESSING FIRM IN
ALBANY, NEW YORK.~~

ELDON BABCOCK IS IN COMPUTER OPERATION FOR THE CROWLEY MILK COMPANY IN BINGHAMTON, NEW YORK.

TRACY LADUE IS NOW IN PROGRAMMING FOR THE CITY OF ROCHESTER, ROCHESTER, NEW YORK.

ERIK JORGENSEN WENT TO RAGU PACKING COMPANY AS A PROGRAMMER TRAINEE.

THE MANGURIAN COMPANY OF ROCHESTER, NEW YORK EMPLOYED MARY WINDOM FOR COMPUTER OPERATION.

THE BOARD OF EDUCATION OF ROCHESTER, NEW YORK HIRED RICHARD KORAL FOR COMPUTER OPERATION.

EDMUND AUDETTE IS NOW IN PROGRAMMING FOR THE RENSSELAER COUNTY SCHOOL DISTRICT, WYNANTSKILL, NEW YORK.

QUESTIONNAIRE

This questionnaire will help us determine your data processing personnel needs and requirements.

Name Of Company _____

Type Of Business _____

Address _____

City _____ State _____ Zip _____

Name of Data Processing Manager _____

Name of Personnel Director _____

Available Positions - - - - -

No. of Positions - - - - -	Requirements - - - - -
----------------------------	------------------------

1. Programmer _____

2. Programmer Trainee _____

3. Computer Operator _____

4. Console Operator _____

5. Tab Operator _____

6. Other _____

---Do you expect any available positions within the next six months?

☐ Yes ☐ No Please describe _____

---Do you expect any available positions within the next year?

☐ Yes ☐ No If so, please describe _____

---Do you presently have a computer? ☐ yes ☐ No

---Do you expect to have a computer within the next two years? ☐ Yes ☐ No

---Please describe type of computer. _____

Configuration. _____

Language Used. _____

Please List Other Machinery In Your Installation. _____

Thank you for your time and patience.

Very truly yours,

NEIL SWEENEY
PLACEMENT DIRECTOR

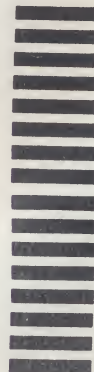
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OF ALBANY INC.

Fred Lockley
~~NORMAN P. SWEENEY~~
PLACEMENT DIRECTOR

35 FULLER ROAD
ALBANY, N. Y. 12205